

Title (en)

Periodic repetition interval staggered post-doppler adaptive monopulse processing for detection and location of a moving target in ground clutter

Title (de)

Adaptive post-Doppler Monopulssignalverarbeitung mit periodisch verzögertem und wiederholtem Signal zur Detektion und Lokalisation eines bewegten Ziels in Bodenstörerechos

Title (fr)

Traitement post-Doppler monopulse adapté de signaux décalés et répétés périodiquement pour la détection et localisation d'une cible dans le feuillu de sol

Publication

EP 1286180 A2 20030226 (EN)

Application

EP 02017712 A 20020807

Priority

US 93089101 A 20010816

Abstract (en)

A method, apparatus, and processing system for radar detection and tracking of a target using monopulse ratio processing comprising the following steps. First, receiving a signal comprised of a plurality of sum azimuth beams and difference azimuth beams. Then staggering the received signal. Next, filtering and localizing a clutter signal which is a portion of the received sum and azimuth beams. Then adaptively forming a sub-array sum azimuth beam and a sub-array difference azimuth beam from the filtered output to cancel the clutter. The adaptive beam forming including the determination of a sum and difference beam weight where the adaptive weight be equated to a product of the weight and the respective covariance matrices of the sum and difference beams, the product having no constraint points. Finally, forming a final sum azimuth beam and final difference beam where the first sub array is related to the sum and azimuth beams of a plurality of other sub-array sum and difference beams, an overall final sum beam is formed and is used for target detection. In addition, an overall final difference beam is formed and the ratio of the overall final difference beam to the overall final sum beam is used for angle location determination. <IMAGE>

IPC 1-7

G01S 13/44

IPC 8 full level

G01S 13/44 (2006.01); **G01S 13/22** (2006.01)

CPC (source: EP US)

G01S 13/4463 (2013.01 - EP US); **G01S 13/449** (2013.01 - EP US); **G01S 13/225** (2013.01 - EP US)

Cited by

CN112698324A; CN111525285A; RU2497146C2; CN103616679A; CN106226749A; GB2479211A; GB2479211B; US9097793B2

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 1286180 A2 20030226; **EP 1286180 A3 20050406**; **EP 1286180 B1 20080116**; DE 60224621 D1 20080306; DE 60224621 T2 20090115; US 2003117314 A1 20030626; US 6720910 B2 20040413

DOCDB simple family (application)

EP 02017712 A 20020807; DE 60224621 T 20020807; US 93089101 A 20010816